ABSTRACT

Methods of displaying and evaluating of a motion data in a motion game apparatus are disclosed. According to the present invention, the motion of a game player following the motion of a dancer can be tracked and evaluated in real time. To induce the correct motion out of the player, in addition to simply showing the animated dancing (or any other motion) character, a display method called the "sliding ghost" metaphor is proposed. Sliding ghosts refers to consecutive freeze frames of the motion data representing key postures of the motion. Also, for enhanced viewing of the motion data, the player can set the view point and key postures may be augmented, with short texts/audio display to further inform the player of the next/current dance (motion) segment to perform. The motion of the player is captured by tracking five specific positions of the player's body. The five body positions are tracked by having the player wear reflective markers on the respective positions, by using four analog/digital cameras with infrared light diodes/filter, a digital signal processing (DSP) board and a personal computer. The computational cost is made lower by taking advantage of the history based prediction and reference motion data. As the motion capture of the player occurs, an instant evaluation is performed by a simple comparison at each discrete time instant and later totaled and averaged for an overall score.